REPORTS OF PRACTICAL ONCOLOGY AND RADIOTHERAPY 18 (2013) S359–S361

View metadata, citation and similar papers at core.ac.uk

brought to you by CORE

provided by Elsevier - Publisher Connector

SciVerse ScienceDirect

journal homepage: http://www.elsevier.com/locate/rpor

Soft tissue sarcomas

A dose-response relationship exists for soft tissue sarcomas of the extremities treated with maximum surgery and intraoperative electron therapy, with or without external beam radiotherapy: Results of a multicentric pooled analysis

A. Polo[1], A. Álvarez[2], A. Montero[1], R. Hernanz[1], C. González-sansegundo[2], A. Ramos[1], M. Cuervo[3], I. Sánchez del Campo[4], D. Pérez-aguilar[4], F. Calvo[2]

[1] *University Hospital Ramon y Cajal, Radiation Oncology*

[2] *University Hospital Gregorio Marañon, Radiation Oncology*

[3] *University Hospital Gregorio Marañon, Orthopaedics*

[4] *University Hospital Ramon y Cajal, Orthopaedics*

Purpose. To analyze if a dose-response relationship exists for soft tissue sarcoma (STS) of the extremities treated with maximum surgical resection and intraoperative electron therapy (IOeRT) with or without external beam radiotherapy (EBRT).
Materials and methods. A multicentric pooled analysis was conducted to analyze the outcome of STS treated with surgery and intraoperative electron therapy. We have selected 138 patients with STS of the extremities. Tumor was primary in 123 patients vs 15 recurrences. Median age at diagnosis was 52y. Median largest tumor diameter was 10 cm. Histologic type was liposarcoma in 41 cases, malignant fibrous histiocytoma in 23, leyomiosarcoma in 18, and others in 56 cases. Histologic gade was G1 in 18, G2 in 47 and G3 in 64. Treatment consisted in maximum surgical resection (R0 in 112 cases, R1 in 25 cases) plus IOeRT (median dose = 12.5 Gy, range 7.5–20 Gy) and EBRT in 123 patients (median dose = 50 Gy, range 25.2–60.4 Gy) Patient factors, tumor factors and treatment factors were analyzed using univariate and multivariate analysis to evaluate correlations with the study endpoints. A linear-quadratic analysis was performed to avoid fractionation effect, and to normalize the dose. Values for total physical dose (IOeRT + EBRT) were transformed into BED (biological effective dose). A dose-response analysis was performed. Dose bins were calculated and univariate survival analysis (Kaplan–Meier method) was performed for each dose bin. This analysis was performed for the whole group and for R0 and R1 subgroups. Survival rates were then fit to a logistic model: $p = d1 + ([d2 - d1]/[(1 + \exp[\text{sigma50} \times (D - \text{TCD50})]])$. The relative steepness of the curve (gamma50) was calculated: gamma50 = TCD50 × sigma50
Results. Resection status (R0 vs. R1) was the only significant factor for local control in multivariate analysis. Five year and ten year local relapse free survival were 85% and 85% for R0 subgroup and 65% and 46% for R1 subgroup ($p = 0.0013$). For R0, two dose bins (cutoff for BED = 40) were identified giving 3yLRFS 88% vs 74% ($p = 0.045$). For R1, two dose bins (cutoff for BED = 75) were identified giving 3yLRFS 70% vs 33% ($p = 0.02$). A dose-response curve was created. Table 1 shows the parameters for the two subgroups.
Conclusion. The use of LQ model remains controversial for large doses per fraction. However, we have found a way to analyze la long series of STS of the extremities and we have found a good fit of the BED to a logistic function giving clinically relevant results suggesting a dose effect for R1 tumors.

http://dx.doi.org/10.1016/j.rpor.2013.03.575

An analysis of the treatment of aggressive fibromatosis: Review of cases

V. Agudelo[1], A. Bobo[1], J. Reyes[2], M. Ruiz[1], B. Belinchón[2], L. Miralles[1], Á. Manso[2], A. Mañas[1]

[1] *Hospital Universitario la Paz, Oncología Radioterápica*

[2] *Hospital Universitario la Paz, Oncologia Radioterápica*

Introduction. Since the constitution in 2006 of the Soft Tissue Tumor Unit (STTU) we have received in our center 25 cases of this rare fibromatosis. It represents 5% of the total STT from our center. We reviewed these cases and evaluated the therapeutic decision making.

1507-1367/$ – see front matter

Materials and methods. Retrospective study of 25 patients diagnosed with aggressive desmoid tumor between 2006 until February 2013. We used the STTU database and clinical reports of each patient to analyze the treatment and follow-up. Radiotherapy (RT) was delivered in photons or electrons using appropriate technique to each site. The median RT dose was 56 Gy (Range 50–60 Gy). A systematic pubmed research was conducted and compared to our decisions and results.
Results. From 25 patients 8 were male and 17 were female. The mean age was 34 years old (range 5–58). Tumor location was: 6 in superior limbs, 14 in inferior limbs, 1 in head and neck and 4 in trunk. The sizes were: <5 cm, 9; 5–10 cm, 10 and >10 cm, 6 patients. 21 patients received surgery as a first treatment and 9 recurred. Preoperative RT was indicated when negative margins resection was impossible, 3 patients were recommended this treatment. Postoperative RT is indicated in high risk of local recurrence due to positive margins, close margins and in case of high morbidity of further surgical resections. 15 patients received RT. The median follow up was 8 months, mean 17 (range 6–39) and no recurrences were detected. Other therapies used were: adjuvant tamoxifen and neoadjuvant imatinib
Conclusions. We received 25 patients in the last 10 years presenting this locally aggressive tumor. Its heterogeneous and uncertain biological behavior demands a multidisciplinary decision-making. Still we have not reached standard treatment and individualization in each case is always needed. In our experience RT plays an important role in this rare pathology.

http://dx.doi.org/10.1016/j.rpor.2013.03.576

Contribution of Rapid-Arc^{TM} in the treatment of retroperitoneal sarcomas

C. Llacer[1], O. Riou[1], D. Azria[1], J. Dubois[1], F. Quenet[2]
[1] *Francia, Montpellier, ICM-Val D'Aurelle, Radioterapia*
[2] *Francia, Montpellier, ICM-Val D'Aurelle, Cirugia*

Introduction. Radiotherapy of retroperitoneal sarcomas remains a technical challenge considering the threshold of contiguous critical organs tolerance. Intensity Modulated Radiation Therapy (IMRT) is useful in many tumors offering higher conformity and reducing the dose to healthy tissues. We present here the implementation of IMRT using Rapidarc^{TM} (RArIMRT) to patients with retroperitoneal sarcomas
Material and Methods. Seven patients with different target shapes and volumes were studied. Planning target volume (PTV) was defined as clinical target volume (CTV) plus 0.5 cm. CTV encompassed gross tumor volume (GTV) plus a 1-cm margin. Five of them were planned to receive RArIMRT before surgery to a total dose of 50 Gy. Prescribed dose was 45 Gy for postoperative setting. A special interest was put in the controlateral or remaining kidney to preserve his function. Dose to spinal cord and small bowel were minimized as much as possible
Results. Mean PTV was 1985cc (range, 384–6198). In all patients, 95% of the dose covered 99% of the PTV. Forty-six percent of the remaining kidney received 5 Gy (V5) but only for the patient presenting the biggest tumor volume. For the six other patients, V5 were 0 to 2.7%. The dose received by 1% of the kidney was 5.4 Gy (range, 3.6–7.6). Maximum dose to the spinal cord was 41 Gy. Portion of the bowel receiving 30, 40, and 50 Gy was 26% (range, 11.9–36), 14% (range, 1.7-22), and 4% (range, 0–11), respectively. All patients but one achieved acceptable results with only one arc. The mean monitor units were 318 (range, 337–395) and the treatment time was 1.1 min for one arc and 2.3 min for two arcs
Conclusion. RArIMRT implemented to retroperitoneal sarcomas is feasible irrespective to the shape and the dimension of the considering volumes. We have now implemented it on rutine in our service.

http://dx.doi.org/10.1016/j.rpor.2013.03.577

Merkel cell carcinoma. Case report

V. Garcia, E. Martinez, R. Sanchez, A. Esteban, E. Cardenas, I. de La Fuente, A. Lozano, R. Garcia
Hospital universitario virgen de la Arrixaca

Purpose. Merkel cell carcinoma (MCC) is an aggressive neuroendocrine carcinoma arising in the dermoepidermal junction. Incidence increases progressively with age. The median age of diagnosis is 65 years. Usually presents as a painless, induration, solitary dermal nodule. There is controversy internationally in the relative roles of surgery and RT in treatment. Treatments regimes are variable. Surgery followed by adjuvant RT to the primary site as well as the lymphatic basin is recommended by some previous studies
Methods and material. 66 year old male who presented for 1 year with progressive growth mass groin. The biopsy report of neuroendocrine tumor performing tumor excision and inguinal lymphadenectomy. Is classified as cT3 cN0 M0 (IIB). We refer to adjuvant radiotherapy
Results. The primary site is treated with 60 Gy in 2 Gy fractions to an area of skin that includes the lesion or scar with a five cm margin